

Preface

Service-Oriented Architecture (SOA) is the software architectural paradigm to which the bridging of the gap between IT and business is mainly attributed to, due to its capability and agility to easily and swiftly string together fairly large chunks of functionality to form ad-hoc applications that reflect existing or new business processes in order to address corresponding existing or new business requirements.

The Delphi technique was adopted as the vehicle for this work because its objective was to anticipate the adoption of SOA (and Web Services) in few years from the time this work was initiated and what might be the driving forces and prohibiting factors for the embracement of this new paradigm. It was due to this reason that the Delphi technique was considered to be the most appropriate methodology because it is used in cases when a forecasting about the state of or attitude toward a phenomenon is desired and the issue under investigation is very complex and requires the contribution of a pool of experts. Despite the criticism of Delphi's reliability, it is extensively used because it combines qualitative comments, which reflect insights of the group of participating members, with quantitative judgments.

In particular, a three-round questionnaire was distributed to participating IT experts with the objective to come up with a new SOA Maturity Model (MM) that would support inter-enterprise setups (beyond company's internal factors and domains). This would capture the model of contemporary organizations where it is a common practice that their core business processes are accomplished through digital "networks" that are spread not only within an entire organization, but also throughout its collaborating organizations.

Throughout this work, important "lessons" were learned that might be used as a guideline for future relevant ventures:

- Even though the Delphi technique proved to be beneficial when there is a need to obtain views and judgments from geographically dispersed knowledgeable people on the investigated issue, the fact that the panel of experts selected for this research originated from -only- the local industry and academia, did not affect its success and reliability because all the other factors (besides locality) were preserved: diversity of knowledge and expertise, acceptable group size whose members never functioned in a simultaneous face-to-face meeting, etc. However, it is advised to be evaluated, reviewed, and adjusted accordingly by academia and industry representatives elsewhere as well;

- The Delphi technique proved to be a potentially useful method for forecasting and obtaining experts' opinion on a topic. However, being that this was the first time this sort of method (variation of Delphi) was used for deriving a SOA MM, the possibility that shortcomings and limitations on the model might be observed is high. For instance, a reliable mechanism should be in place for inviting experts from all collaborating organizations, but at the same time preserving that they never function in a simultaneous face-to-face meeting;
- Delphi, by design, requests participating experts' opinion on an issue by providing possible responses, in the form of a series of questionnaires. No mechanism is in place for accepting critique on the questionnaires' design and content. It might be useful to let participants comment on topics where they are (proven to be) experts. This may lead to more complete and accurate final results;
- The electronic version of Delphi (known as "e-Delphi") might also be used in future works instead of the traditional version because it provides a number of benefits: quicker and easier implementation and management of the questionnaires, enhancement of the Delphi technique's reliability because no human intervention will be involved, etc.;

Finally, I would like to thank all colleagues, IT experts, who helped me with their feedback and insights to come up with this newly proposed SOA MM and, of course, my Editor Mr. Christian Rauscher, his Assistant Mrs. Barbara Bethke and the whole team at Springer whose contribution was invaluable for the publication of this work.

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SOA Maturity Model

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